

CLAIMS:

1. An orifice device for use with a vibration absorption device and adapted to be disposed within a fluid chamber of the vibration absorption device, the fluid chamber being defined by at least a wall portion made of resilient material, comprising:

an orifice casing;

a retaining cover;

a membrane made of resilient material and arranged and constructed to be clamped between the orifice casing and the retaining cover; and

a lock mechanism arranged and constructed to lock the orifice casing and the retaining cover together when the orifice casing and the retaining cover rotate relative to each other about an axis while the orifice casing and the retaining cover are lapped with each other.

2. An orifice device as in claim 1, wherein:

the lock mechanism comprises a first engaging member and a second engaging member disposed on one and the other of the orifice casing and the retaining cover, respectively;

the first engaging member includes an engaging projection that has an engaging recess;

the second engaging member includes an engaging hole and an engaging edge,

the engaging hole has a projection receiving portion and an engaging portion arranged in series in the rotational direction of the orifice casing or the retaining cover,

the projection receiving portion is configured to receive the engaging projection of the first engaging member when the orifice casing and the retaining cover are positioned to be lapped with each other; and

the engaging edge is defined by the engaging portion and is configured to engage the engaging recess of the first engaging member, so that the orifice casing and the retaining cover are prevented from being removed from each other in an axial direction, when the retaining cover is rotated in one direction relative to the orifice casing after the engaging projection has been received by the projection receiving portion.

3. An orifice device as in claim 2, wherein the engaging projection further includes a rotation prevention wall that is configured to oppose to the engaging edge in the rotational direction, so that the retaining cover is prevented from rotating further in the rotational direction after the engaging edge has engaged with the engaging recess.
4. An orifice device as in claim 2, wherein the membrane is compressed between the orifice casing and the retaining cover when the engaging edge engages the engaging recess, so that a force is applied by the membrane to press the engaging edge and the engaging projection against each other in the axial direction of the orifice casing or the retaining cover.
5. An orifice device as in claim 2 wherein the first engaging member is disposed on the orifice casing and the second engaging member is disposed on the retaining cover.
6. An orifice device as in claim 5 wherein the first engaging member is formed integrally with the orifice casing and the second engaging member is formed integrally with the retaining cover.
7. An orifice device as in claim 5, wherein a plurality of first engaging members are disposed on an end portion in the axial direction of the orifice casing and are spaced substantially equally from each other in the circumferential direction, and a plurality of second engaging members are disposed on the retaining cover and are spaced substantially equally from each other in the circumferential direction for engagement with the corresponding first engaging members.
8. An orifice device as in claim 7, wherein the first engaging members are formed integrally with the end portion of the orifice casing and the second engaging members are formed integrally with the retaining cover.
9. An orifice device as in claim 8, wherein the orifice casing includes a helical groove formed in an outer peripheral surface thereof, the helical groove has one end that opens at the end portion of the orifice casing via a communication opening, the retaining cover has a

communication slot configured to communicate with the communication opening, the engaging projections of two of the first engaging members are disposed on both sides of the communication opening in the circumferential direction, and the engaging holes of two of the second engaging members are disposed on both sides of the communication slot in the circumferential direction in continuity with the communication slot.

10. A vibration absorption device comprising the orifice device as in claim 1.

11. A vibration absorption device as in claim 10, further including:

- a first mount arranged and constructed to be mounted on a vehicle engine;
- a second mount arranged and constructed to be mounted on a vehicle body;
- a resilient member disposed between the first and second mounts and defining the fluid chamber; and

- a diaphragm disposed within the resilient member at a position below the orifice device, so that the fluid chamber is separated into a pressure receiving section on the upper side of the orifice device and a pressure balancing section on the lower side of the orifice device;

- wherein the orifice casing of the orifice device includes a helical groove formed in an outer peripheral surface thereof, so that an orifice channel is formed between the outer peripheral surface of the orifice casing and an inner wall of the fluid chamber and communicates with the pressure receiving section and the pressure balancing section, and

- the lock mechanism is positioned within the pressure balancing section such that the lock mechanism does not interfere with the diaphragm.

12. A method of assembling an orifice device as in claim 1 comprising:

- positioning the orifice casing and the retaining cover to be lapped with each other in the axial direction with the membrane interposed between the orifice casing and the retaining cover;

- pressing the orifice casing and the retaining cover against each other in the axial direction, so that a part of the membrane is resiliently deformed;

- rotating the orifice casing and the retaining cover relative to each other, so that the orifice casing and the retaining cover are locked together by the lock mechanism; and

releasing the pressing force applied to the orifice casing and the retaining cover.

13. A method of assembling an orifice device as in claim 2 comprising:

positioning the orifice casing and the retaining cover to be lapped with each other in the axial direction while the membrane is interposed between the orifice casing and the retaining cover; so that the engaging projection of the first engaging member of the lock mechanism is fitted into the projection receiving portion of the engaging hole of the second engaging member of the lock mechanism;

pressing the orifice casing and the retaining cover against each other in the axial direction, so that a part of the membrane is resiliently deformed;

rotating the orifice casing and the retaining cover relative to each other, so that the engaging projection moves from the projection receiving portion to the engaging portion along the engaging hole and the engaging edge of the second engaging portion engages the engaging recess of the first engaging member; and

releasing the pressing force applied to the orifice casing and the retaining cover.